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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,552	10/23/2003	Chang-June C.J. Yoon	2803.0246C	6410
27896 7590 01/21/2011 EDELL, SHAPIRO & FINNAN, LLC 1901 RESEARCH BOULEVARD SUITE 400 ROCKVILLE, MD 20850			EXAMINER GEORGEWILL, OPIRIBO	
			ART UNIT 2617	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

epatent@usiplaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/690,552	<b>Applicant(s)</b> YOON ET AL.	
	<b>Examiner</b> OPIRIBO GEORGEWILL	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-30 and 33-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 14, 15, 31, 32 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is responsive to Applicant's amendment filed on 10/12/2010.

#### ***Response to Amendment***

2. The declaration filed on 6/29/10 under 37 CFR 1.131 is sufficient to overcome the Schrader et al., (US Pub No. 20050243765 A1) reference.

#### ***Response to Arguments***

3. Applicant's arguments with respect to claim 1- 3, 8 – 10, 13, 16, 19, 20, 25 -27, 30, 33, 36 – 38, 4 – 7, 11, 12, 21 – 24, 28, 29 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-  
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English.

5. **Claim 1, 4, 9 – 12, 19, 21, 26-29, 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoon et al., US Pub No. 20040047307 A1**

Re claim **1**, Yoon discloses in a communication network having a plurality of communication unit, a communication unit that transmits messages to and receiving messages from neighboring communication units (abstract); the communication unit comprising

a transmitter to transmit an outgoing message to a neighboring communication unit (paragraph [16])

a receiver to receive an incoming message from a neighboring communication unit (paragraph [16])

a storage unit to store communication unit connectivity information, neighboring unit connectivity information and merge request information (paragraphs [19], [30], [33])

a processor to control said transmission of outgoing messages and reception of incoming message (fig 3, ref 312, 318, 313, 316, 306, 310), wherein the processor includes:

a merge module to examine said stored communication unit connectivity information, stored neighboring communication unit connectivity information and stored merge request to determine merge control parameters to control merge between communication unit operating in a first Time of Day synchronization mode and a neighboring communication network operating in a second Time of Day synchronization mode that is different from the first mode (paragraphs [16], [19], [36] - [39])

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and a controller module to control the merging of the communication unit with said neighboring communication network in accordance with said merge control parameters determined by said merge module (paragraphs [36] - [39], [44] - [49])

The rejection of claim 1 is incorporated herein. Claim 2 depends on claim 1 and only further limitations will be addressed below

Re claim **4**, Yoon discloses a synchronization module to determine the Time of Day synchronization mode used by the communication unit (fig 3, ref 305; fig 4, ref 408)

The rejection of claim 1 is incorporated herein. Claim 9 depends on claim 1 and only further limitations will be addressed below

Re claim **9**, Yoon discloses a search module to determine search parameters that control the manner in which the communication unit searches for neighboring communication units and neighboring communication network nodes (paragraphs [31], fig 1); wherein the controller module further controls transmission of outgoing messages and reception of incoming messages in a manner consistent with search parameter determined by the search module (paragraph [31], fig 1, fig 2)

The rejection of claim 9 is incorporated herein. Claim 10 depends on claim 9 and only further limitations will be addressed below

Re claim **10**, Yoon disclose a transmit rate module to determine the rate at which the communication unit transmits outgoing messages containing connectivity information (fig 1, fig 2, TODXmtReat; also see paragraphs [9], [10])

The rejection of claim 10 is incorporated herein. Claim 11 depends on claim 10 and only further limitations will be addressed below.

Re claim **11**, Yoon discloses that the transmit rate module determines the transmit rate based upon a user configurable reference transmit rate value and a percentage of network size parameter value for the communication network to which the communication unit belong (fig 1, fig 2, paragraph [9], [10])

The rejection of claim 11 is incorporated herein. Claim 12 depends on claim 11 and only further limitations will be addressed below

Re claim **12**, Yoon discloses that the transmit rate is proportional to the percentage of network size parameter value (paragraphs [9], [10])

Re claim **19**, it is method drawn to the apparatus claim 1, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **21**, it is method drawn to the apparatus claim 4, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **26**, as applied to claim 19 above, it is method drawn to the apparatus claim 9, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **27**, as applied to claim 19 above, it is method drawn to the apparatus claim 10, and is rejected for the same reason as above because

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implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **28**, as applied to claim 27 above, it is method drawn to the apparatus claim 11, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **29**, as applied to claim 28 above, it is method drawn to the apparatus claim 12, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **36**, it has similar limitations claim 1 above which are met by the reference above and is rejected for the same reason of anticipation as above.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining

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obviousness under 35 U.S.C. 103(a) are summarized as follows: (*See MPEP Ch. 2141*)

- a. Determining the scope and contents of the prior art;
- b. Ascertaining the differences between the prior art and the claims in issue;
- c. Resolving the level of ordinary skill in the pertinent art; and
- d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

**7. Claims 1 – 10, 13, 16, 19, 20 – 27, 30, 33, 36 – 38 are rejected under 35**

**U.S.C. 103(a) as being unpatentable over Rune et al., US Pub No.**

**20010029166 A1 in view of Karaoguz et al., US Pub No. 20020059434 A1.**

Re claim 1, Rune discloses in a communication network having a plurality of communication units, a communication unit that transmits messages and receives messages from a neighboring communication unit (abstract), the communication unit comprises:

a transmitter to transmit an outgoing message to a neighboring communication unit (paragraph [21])

a receiver to receive an incoming message from the neighboring communication unit (paragraph [21])

a storage unit (paragraph [127], such information can then be used (implies storage) to store communication unit connectivity information (paragraph [127], clock value (clearly information needed when another node wants to connect to this node). Furthermore see paragraph [110], BD\_ADDR which is known and expected to be stored on all Bluetooth devices), neighboring communication unit connectivity information (paragraph [127], addresses of other units in the ad hoc

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network; paragraph [95], BD\_ADDR) and merge request information (paragraph [69], will want to connect to the paging unit (implies merge request))

a processor to control said transmission of outgoing and reception of incoming messages (fig 3 discloses a processor based system and it is known and expected that the processes are controlled by a processor)

a merge module to examine said stored communication unit connectivity information, stored neighboring communication unit connectivity information and stored merge request information to determine merge control parameter to control merge between the communication unit and a neighboring communication network (paragraph [127], Such received information can then be used when the unit decided how to join them (merge module examines))

a controller module to control merge merging of the communication unit with said neighboring communication network in accordance with said merge control parameters (paragraph [127])

Rune discloses the claimed in invention but is silent on the communication unit operating in a first Time of Day synchronization mode and a neighboring communication network operating in a second Time of Day synchronization mode that is different from the first mode.

Karaoguz in analogous art (see abstract) discloses the known technique of a communication unit operating in a first Time of Day synchronization mode (paragraph [67], HomeRF network. Clearly has a Time of Day synchronization mode (see paragraph [58], time-synchronous networks)) and a neighboring

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communication network operating in a second Time of Day synchronization mode that is different from the first mode (paragraph [70], fig 10, ref 190 – 194, bluetooth. It is clear that Bluetooth has a different time of day synchronization from HomeRF).

It would therefore have been obvious to a person having ordinary skills in the art, at the time the invention was made, to incorporate this teaching of Karaoguz into the disclosure of Rune, having the communication unit operating in a first Time of Day synchronization and a neighboring communication network operating in a second Time of Day synchronization mode that is different from the first mode so as to take advantage of services provided by a particular network when the device is within the area of coverage provided by that network (paragraph [8])

The rejection of claim 1 is incorporated herein. Claims 2, 3, 4, 8, 9 depend on claim 1 and only further limitations will be addressed below.

Re claim **2**, Rune in view of Karaoguz discloses that the transmitter transmits said outgoing message in the form of radio signals (Rune: paragraph [21], Bluetooth)

Re claim **3**, Rune in view of Karaoguz discloses that the receiver receives said incoming message in the form of radio signals (Rune: paragraph [21], Bluetooth)

Re claim **4**, Rune in view of Karaoguz discloses a synchronization module to determine the Time of Day synchronization mode used by the communication unit (Karaoguz: paragraph [70])

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The rejection of claim 5 is incorporated herein. Claim 5 depends on claim 4 and only further limitations will be addressed below

Re claim **5**, Rune in view of Karaoguz discloses a start up module to join the communication to an existing communication network at power up using a user configurable primary Time of Days synchronization (Karaoguz: fig 14, ref 234)

The rejection of claim 5 is incorporated herein. Claim 6 depends on claim 5 and only further limitations will be addressed below.

Re claim **6**, Rune in view of Karaoguz discloses a Time of Day mode module to change the Time of Day synchronization mode of the communication unit in response to the communication unit failing to join a communication network with neighboring communication unit (Karaoguz: fig 10, ref 176, NO) using a previously selected Time of Day synchronization mode (Karaoguz: fig 10, ref 188, Bluetooth) and to join the communication unit to an existing communication unit to an existing communication network using the changed Time of Day synchronization mode (Karaoguz: fig 10, refs 190, 192, 194)

The rejection of claim 6 is incorporated herein. Claim 7 depends on claim 6 and only further limitations will be addressed below

Re claim **7**, Rune in view of Karaoguz discloses a network start module to start an isolated network with neighboring communication nodes upon failure to join a communication network with previously selected Time of Day synchronization modes (Rune: paragraph [75])

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Re claim **8**, Rune in view of Karaoguz discloses a that the storage module further comprises a connectivity module to store at least one of an identifier for a communication network to which the communication unit belongs, an identifier for a neighboring communication unit, an identifier for a communication network to which a neighboring communication unit belongs, and an identifier for a neighboring communication unit's neighbor (Rune: paragraph [127]).

Re claim **9**, Rune in view of Karaoguz discloses that said processor further includes a search module to determine search parameters that control the manner in which the communication unit searches for neighboring communication units and neighboring communication network nodes (Rune: paragraph [21]), wherein the controller module further controls transmission of outgoing messages and reception of incoming messages in a manner consistent with search parameters determined by the search module (Rune: paragraph [21])

The rejection of claim 9 is incorporated herein. Claims 10, 13 depend on claim 9 and only further limitations will be addressed below.

Re claim **10**, Rune in view of Karaoguz discloses a transmit rate module to determine a rate at which the communication unit transmits outgoing messages containing network connectivity information (Rune: paragraph [21], repeatedly transmitted according to specified timing)

Re claim **13**, Rune in view of Karaoguz discloses that the search module further includes a scan window module to determine a scan window interval during which the communication unit receives network connectivity messages

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and scan window delay module to determine a delay between scan window intervals (Rune: paragraph [21], repeatedly transmitting according to well specified timing and frequency sequence and listen for response)

Re claim **16**, Rune in view of Karaoguz discloses that the merge module further includes a merge priority module to determine a merge priority for each neighboring communication network in response to the communication unit controlling said merging, wherein the merge priority controls the priority in which the communication unit allows the communication network to which the communication unit belongs to merge with neighboring communication networks (Rune: paragraph [127])

Re claim **19**, it is method drawn to the apparatus claim 1, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **20**, it is method drawn to the apparatus claim 2, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **21**, it is method drawn to the apparatus claim 4, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **22**, it is method drawn to the apparatus claim 5, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

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Re claim **23**, as applied to claim 22 above, it is method drawn to the apparatus claim 6, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **24**, as applied to claim 23 above, it is method drawn to the apparatus claim 7, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **25**, as applied to claim 19 above, it is method drawn to the apparatus claim 8, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **26**, as applied to claim 19 above, it is method drawn to the apparatus claim 9, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **27**, as applied to claim 19 above, it is method drawn to the apparatus claim 10, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **30**, as applied to claim 26 above, it is method drawn to the apparatus claim 13, and is rejected for the same reason as above because

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implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **33**, as applied to claim 19 above, it is method drawn to the apparatus claim 16, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **36**, it has similar limitations claim 1 above which are met by the reference above and is rejected for the same reason of anticipation as above.

Re claim **37**, as applied to claim 36 above, it has similar limitations claim 2 above which are met by the reference above and is rejected for the same reason of anticipation as above.

Re claim **38**, as applied to claim 36 above, it has similar limitations claim 16 above which are met by the reference above and is rejected for the same reason of anticipation as above.

- 8. Claims 17, 18, 34, 35, 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rune et al., US Pub No. 20010029166 A1 in view of Karaoguz et al., US Pub No. 20020059434 A1 and further in view of Fonseca et al., US Pub No. 20040033778 A1.**

The rejection of claim 16 is incorporated herein. Claim 17 depends on claim 16 and only further limitations will be addressed below.

Re claim **17**, Rune in view of Karaoguz discloses the claimed invention including traffic situation in the other network is used when determining which

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network to merge with (paragraph [127]), but is silent on the traffic situation a comparison of a number of active communication units in the neighboring communication network with a number of total communication units in the neighboring communication network. Fonseca in analogous art teaches the advantages of having more active users in a network (paragraph [45] – [46], where Fonseca teaches that as the percentage of active users increases there is reduction in average power consumption). It is clear from Fonseca that a network with more active percentage active users would be more attractive to a potential merging unit or network than one with less. It would therefore have been obvious to a person having ordinary skills in the art, at the time of the invention, to incorporate this teaching of Fonseca into the disclosure of Rune, to have the merge priority of a neighboring communication network based upon a comparison of the number of active communication units in the neighboring communication network with a number of total communication units in the neighboring communication network so as to reduce average current consumption (paragraph [45]).

The rejection of claim 17 is incorporated herein. Claim 18 depends on claim 17 and only further limitations will be addressed below.

Re claim **18**, Rune in view of Karaoguz and further in view of Fonseca discloses that the merge priority is proportional to a quotient of the number of active communication units and the number of total communication units for each

respective neighboring network (Rune: paragraph [46], result increase when the percentage of active users is increased).

Re claim **34**, as applied to claim 33 above, it is method drawn to the apparatus claim 17, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **35**, as applied to claim 34 above, it is method drawn to the apparatus claim 18, and is rejected for the same reason as above because implementing the apparatus would necessitate carrying out the method as claimed.

Re claim **39**, as applied to claim 38 above, it has similar limitations claim 17 above which are met by the reference above and is rejected for the same reason as above.

Re claim **40**, as applied to claim 39 above, it has similar limitations claim 18 above which are met by the reference above and is rejected for the same reason of anticipation as above.

### ***Allowable Subject Matter***

9. Claims 14, 15, 31, 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OPIRIBO GEORGEWILL whose telephone number is (571)270-7926. The examiner can normally be reached on Monday through Thursday, 9:00am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinsong Hu can be reached on (571)272-3965. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OPIRIBO GEORGEWILL/  
Examiner, Art Unit 2617

/Jinsong Hu/  
Supervisory Patent Examiner, Art Unit 2617